Abstract of the Disclosure

A method of forming a semiconductor device including a memory cell area having a plurality of memory cells and a peripheral circuit area for reading and writing data on the memory cells in the memory cell area of a semiconductor substrate is provided. Contact pads are formed on source/drain regions of transistors in the peripheral circuit area as well as in the memory cell area. The contact pads are concurrently formed on the source/drain regions of the transistors in the memory cell area and the peripheral circuit area. As a result, there is no step difference between the contact pads and, thus, it is easy to form metal contact plugs on the contact pads.